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Search Report
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To: HOA LE
Location: REM-9D61
Art Unit: 1795
Tuesday, February 26, 2008
Phone: (571) 272-1332
Case Serial Number: 10 / 554146

From: JAN DELAVAL
Location: EIC1700
REM-4B28 / REM-4A30
Phone: (571) 272-2504

jan.delaval@uspto.gov

Search Notes

HOA VAN LE
PRIMARY EXAMINER
Hoa Van Le
02/27/08

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Search and Information Resources Administration

Access DB# 251376

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: HOA VAN LE Examiner #: 60626 Date: 13 February 2008
Art Unit: 1795 Phone Number 30 2-1332 Serial Number: 10/554,146
Mail Box and Bldg/Room Location: REM 9D61 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

****

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: _____

Inventors (please provide full names): Please see the attachment

SCIENTIFIC REFERENCE BR
Sci & Tech Inf. Ctr.
FEB 1 RECD
Pat. & T.M Office

Earliest Priority Filing Date: _____

**For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*

Please search for crosslinked copolymers as disclosed in the claims.

Thank you.

STAFF USE ONLY

Searcher: _____

Searcher Phone #: _____

Searcher Location: _____

Date Searcher Picked Up: 2/26/08

Date Completed: 2/26/08

Searcher Prep & Review Time: _____

Clerical Prep Time: 45

Online Time: +30

Type of Search

NA Sequence (#)_____

AA Sequence (#)_____

Structure (#) ✓

Bibliographic _____

Litigation _____

Fulltext _____

Patent Family _____

Other _____

Vendors and cost where applicable

STN ✓

Dialog _____

Questel/Orbit _____

Dr.Link _____

Lexis/Nexis_____

Sequence Systems _____

WWW/Internet _____

Other (specify)_____

PTO-1590 (8-01)

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FILE COVERS 1907 - 26 Feb 2008  VOL 148 ISS 9
FILE LAST UPDATED: 25 Feb 2008  (20080225/ED)

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 This file contains CAS Registry Numbers for easy and accurate
 substance identification.

=> => d l82 bib abs hitind hitstr retable tot

L82  ANSWER 1 OF 9  HCAPLUS  COPYRIGHT 2008 ACS on STN
AN   2004:1059635  HCAPLUS
DN   142:45859
TI   Binder resin for toner and toner
     for electrophotography
IN   Sakata, Kazuya; Yoshida, Takeshi
PA   Mitsui Chemicals, Inc., Japan
SO   PCT Int. Appl., 30 pp.
     CODEN: PIXXD2
DT   Patent
LA   Japanese
FAN.CNT 1
     PATENT NO.          KIND   DATE       APPLICATION NO.        DATE
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             GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,
             LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI,
             NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY,
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     TW 243973             B     20051121   TW 2004-93115079       20040527 <--
     EP 1630620            A1    20060301   EP 2004-735132         20040527 <--
         R:  DE, FR, GB
     CN 1795419            A     20060628   CN 2004-80014584       20040527 <--
     US 2006251980         A1    20061109   US 2005-554146         20051024 <--
     IN 2005DN05463        A     20071005   IN 2005-DN5463         20051128 <--
PRAI JP 2003-153550        A     20030529  <--
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WO 2004-JP7663 W 20040527 <--

AB Disclosed is a **binder resin** for **toners** which is excellent in fixability and non-offset properties even when used in a high-speed copier and is excellent also in suitability for pulverization, long-lasting developing properties, etc.; and a **toner** for **electrophotog.** The **binder resin** for **toners** comprises a **resin** which is obtained by mixing a vinyl polymer with a **crosslinked resin** obtained by reacting a vinyl polymer having a specific **mol. weight** and a specific functional-group content with a **crosslinking** agent and which has a specific gel content. A **toner** made with the **binder resin** is excellent in performances including fixability even when used in a high-speed copier. Even when continuously used for long in a copier, the **toner** gives **electrophotog.** prints with satisfactory reproduction

IC ICM **G03G0009-087**
ICS **C08J0003-24**

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38

ST **binder resin toner electrophotog** **crosslinked** vinyl polymer

IT **Electrophotographic toners**
(vinyl polymer **binder resin** for **electrophotog. toner**)

IT **25036-16-2P**, Butyl acrylate-methacrylic acid-styrene copolymer **26428-43-3P**, Butyl acrylate-glycidyl methacrylate-styrene copolymer
RL: NUU (Other use, unclassified); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(**binder resin**; vinyl polymer **binder resin** for **electrophotog. toner**)

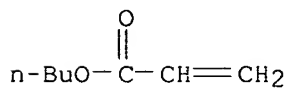
IT **25036-16-2P**, Butyl acrylate-methacrylic acid-styrene copolymer **26428-43-3P**, Butyl acrylate-glycidyl methacrylate-styrene copolymer
RL: NUU (Other use, unclassified); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(**binder resin**; vinyl polymer **binder resin** for **electrophotog. toner**)

RN 25036-16-2 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, polymer with butyl 2-propenoate and ethenylbenzene (CA INDEX NAME)

CM 1

CRN 141-32-2
CMF C7 H12 O2



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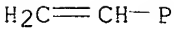
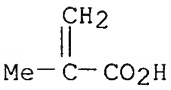


CM 3

CRN 79-41-4
CMF C4 H6 O2



RN 26428-43-3 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, 2-oxiranylmethyl ester, polymer with butyl 2-propenoate and ethenylbenzene (CA INDEX NAME)

CM 1

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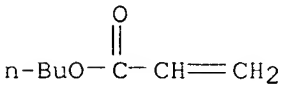

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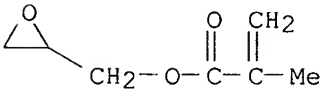

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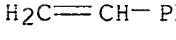


RETABLE

Referenced Author (RAU)	Year (RPY)	VOL (RVL)	PG (RPG)	Referenced Work (RWK)	Referenced File
Canon Inc	2001			JP 2001188383 A	HCAPLUS
Canon Inc	2002			US 20020098431 A	HCAPLUS
Canon Inc	2002			JP 2002221813 A	HCAPLUS

Canon Inc	2003			JP 2003241427 A	HCAPLUS
Hitachi Kasei Kabushiki	1986			JP 61-163347 A	HCAPLUS
Mitsui Toatsu Chemicals	1994			JP 06-11890 A	HCAPLUS
Mitsui Toatsu Chemicals	1994			US 3570958 A	
Mitsui Toatsu Chemicals	1994			EP 555022 A	HCAPLUS
Sekisui Chemical Co Ltd	1997			JP 09-244295 A	HCAPLUS

L82 ANSWER 2 OF 9 HCAPLUS COPYRIGHT 2008 ACS on STN
AN 2004:842664 HCAPLUS
DN 141:358025
TI **Electrophotographic toner binders** and **electrophotographic toners** containing the same
IN **Sakata, Kazuya; Yoshida, Takeshi**
PA **Mitsui Chemicals Inc., Japan**
SO Jpn. Kokai Tokkyo Koho, 17 pp.
CODEN: JKXXAF
DT **Patent**
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2004287295	A	20041014	JP 2003-81636	20030324 <--
	JP 4017548	B2	20071205		
PRAI	JP 2003-81636		20030324 <--		

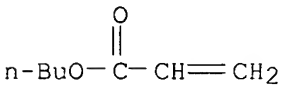
AB The title **binder resin** contains a **crosslinking** agent, vinyl polymer(H) consisting of: vinyl polymer(1) having 50,000-1,000,000 weight average **mol. weight** in THF soluble portion by GPC and ≤0.02 mol/kg **resin** of COOH, acid anhydride, or amino group content; and vinyl polymer(2) having 50,000-1,000,000 weight average **mol. weight** and 0.1-2.0 mol/kg **resin** of COOH, acid anhydride, or amino group content, and vinyl polymer(L) having 4,000-50,000 weight average **mol. weight** and ≤0.7 mol/kg **resin** of COOH, acid anhydride, or amino group content, wherein the weight ratio of vinyl polymer(1)/vinyl polymer(2) is 10/90-90/10 and wherein the weight ratio of vinyl polymer(H)/vinyl polymer(L) is 5/95-40/60. The title **binder** contains 1-50 % gel portion. The **binder** provides good characteristics on **toner** image fixing, offset-resistance, and durability for high speed development.

IC ICM **G03G0009-087**
CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 37
ST **electrophotog toner binder** vinyl polymer
IT **Electrophotographic toners**
(**electrophotog. toner binders** and **electrophotog. toners** containing the same)
IT **25036-16-2P**, Styrene/butyl acrylate/ methacrylic acid copolymer **25767-47-9P**, Styrene/butyl acrylate copolymer **26428-43-3P**, Styrene/butyl acrylate/glycidyl methacrylate copolymer
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(**electrophotog. toner binders**)
IT **25036-16-2P**, Styrene/butyl acrylate/ methacrylic acid copolymer **25767-47-9P**, Styrene/butyl acrylate copolymer **26428-43-3P**, Styrene/butyl acrylate/glycidyl methacrylate copolymer
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(**electrophotog. toner binders**)
RN 25036-16-2 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, polymer with butyl 2-propenoate and ethenylbenzene (CA INDEX NAME)

CM 1

CRN 141-32-2
CMF C7 H12 O2



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CRN 100-42-5
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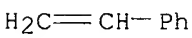

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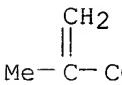
CMF C4 H6 O2



RN 25767-47-9 HCAPLUS
CN 2-Propenoic acid, butyl ester, polymer with ethenylbenzene (CA INDEX NAME)

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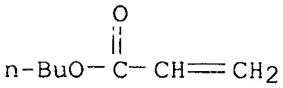

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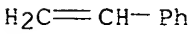

RN 26428-43-3 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, 2-oxiranylmethyl ester, polymer with butyl 2-propenoate and ethenylbenzene (CA INDEX NAME)

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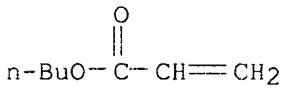
CRN 141-32-2
CMF C7 H12 O2



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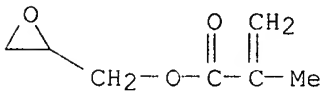

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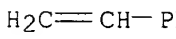

L82 ANSWER 3 OF 9 HCAPLUS COPYRIGHT 2008 ACS on STN
AN 2004:143390 HCAPLUS
DN 140:207400
TI **Binder resin** for **toner** and **electrophotographic toner** containing the same
IN **Sakata, Kazuya; Yoshida, Takeshi**
PA **Mitsui Chemicals, Inc., Japan**
SO PCT Int. Appl., 34 pp.
CODEN: PIXXD2
DT **Patent**
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2004015498	A1	20040219	WO 2003-JP10165	20030808 <--

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RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

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CN	1675593	A	20050928	CN 2003-819211	20030808 <--
JP	4043475	B2	20080206	JP 2004-527385	20030808 <--
US	2005208410	A1	20050922	US 2004-515313	20041123 <--
US	7244538	B2	20070717		
PRAI JP	2002-232002	A	20020808 <--		
WO	2003-JP10165	W	20030808 <--		

AB The invention relates to a **binder resin** for a **toner** which comprises at least three types of vinyl polymers each having a **mol. weight**, a content of a functional group or the like different from one another and a **crosslinking** agent preferably having a vinyl polymer structure, and has a specific gel content. The **binder resin** for a **toner** and a **toner** using the **resin** are excellent in the fixability at a low temperature and also are excellent in the resistance to offsetting phenomenon and blocking, pulverized properties, durability in development, and the like, and thus can be suitably used as those for a high speed copier.

IC ICM **G03G0009-087**
ICS **C08J0003-24**

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 35

ST **binder resin toner electrophotog**

IT **Electrophotographic toners**
(**binder resin** for **toner** and **toner**
)

IT **25036-16-2P**, Styrene/butyl acrylate/methacrylic acid copolymer
26428-43-3P, Styrene/butyl acrylate/glycidyl methacrylate copolymer
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(**binder resin** for **toner** and **toner**
)

IT **38637-59-1P**, Styrene/butyl acrylate/methacrylic acid/glycidyl methacrylate copolymer
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(**binder resin** for **toner** and **toner**
)

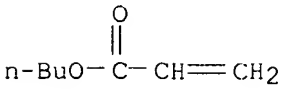
IT **25036-16-2P**, Styrene/butyl acrylate/methacrylic acid copolymer
26428-43-3P, Styrene/butyl acrylate/glycidyl methacrylate copolymer
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(**binder resin** for **toner** and **toner**
)

RN 25036-16-2 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, polymer with butyl 2-propenoate and ethenylbenzene (CA INDEX NAME)

CM 1

CRN 141-32-2
CMF C7 H12 O2



CM 2

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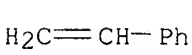

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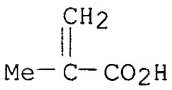

RN 26428-43-3 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, 2-oxiranylmethyl ester, polymer with butyl 2-propenoate and ethenylbenzene (CA INDEX NAME)

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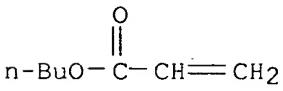

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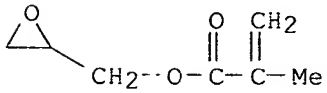

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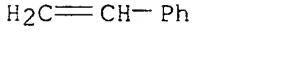
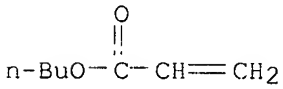


IT **38637-59-1P**, Styrene/butyl acrylate/methacrylic acid/glycidyl methacrylate copolymer
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(**binder resin** for **toner** and **toner**
)
RN 38637-59-1 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, polymer with butyl 2-propenoate, ethenylbenzene and 2-oxiranylmethyl 2-methyl-2-propenoate (CA INDEX NAME)

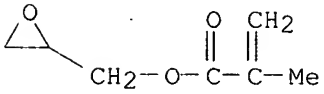
CM 1

CRN 141-32-2
CMF C7 H12 O2



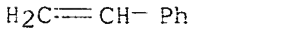
CM 2

CRN 106-91-2
CMF C7 H10 O3



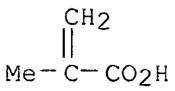
CM 3

CRN 100-42-5
CMF C8 H8



CM 4

CRN 79-41-4
CMF C4 H6 O2



RETABLE

Referenced Author (RAU)	Year (RPY)	VOL (RVL)	PG (RPG)	Referenced Work (RWK)	Referenced File
Canon Inc	2001			JP 2001188383 A	HCAPLUS
Canon Inc	2002			JP 2002148864 A	HCAPLUS
Canon Inc	2002			JP 200223417 A	
Mitsubishi Rayon Co Ltd	1995			JP 07-120972 A	HCAPLUS
Mitsubishi Rayon Co Ltd	1995			TW 412563 A	HCAPLUS
Sanyo Chemical Industri	2000			JP 200081729 A	
Sanyo Chemical Industri	2000			JP 200081730 A	
Sekisui Chemical Co Ltd	1997			JP 09-244295 A	HCAPLUS

L82 ANSWER 4 OF 9 HCAPLUS COPYRIGHT 2008 ACS on STN
AN 1998:210641 HCAPLUS
DN 128:315077
TI **Electrophotographic toner** with excellent characteristics
IN **Sakata, Kazuya**; Okada, Yasuo; Hata, Masaaki
PA **Mitsui Toatsu Chemicals, Inc., Japan**
SO Jpn. Kokai Tokkyo Koho, 14 pp.
CODEN: JKXXAF
DT **Patent**
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 10087837	A	19980407	JP 1996-240420	19960911 <--
	JP 3794762	B2	20060712		
PRAI	JP 1996-240420		19960911 <--		

AB The title **toner** comprises a polymer prepared from COOH-group-containing vinyl **binders** and glycidyl-group-containing vinyl **crosslinking** agents, wherein the polymer shows a 1st **mol**. **weight** peak at 1,000-30,000 and a 2nd **mol. wt**. peak at 150,000-600,000 by a GPC anal., contains 1-30 % gel-components, and has a Tg of 45-75°. The **toner** shows excellent **toner** characteristics.

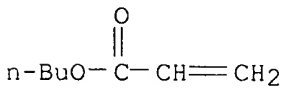
IC ICM C08G0081-00
ICS **G03G0009-08; G03G0009-087**
CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38
ST **electrophotog toner** vinyl **binder** **crosslinking** agent
IT **Crosslinking** agents
Electrophotographic toners
(**electrophotog. toner** with excellent characteristics)
IT **25036-16-2**, n-Butyl acrylate-methacrylic acid-styrene copolymer
26428-43-3, n-Butyl acrylate-glycidyl methacrylate-styrene copolymer
RL: DEV (Device component use); USES (Uses)
(**electrophotog. toner** with excellent characteristics)

IT **25036-16-2**, n-Butyl acrylate-methacrylic acid-styrene copolymer
26428-43-3, n-Butyl acrylate-glycidyl methacrylate-styrene copolymer
RL: DEV (Device component use); USES (Uses)
(**electrophotog. toner** with excellent characteristics)

RN 25036-16-2 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, polymer with butyl 2-propenoate and ethenylbenzene (CA INDEX NAME)

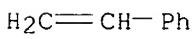
CM 1

CRN 141-32-2
CMF C7 H12 O2



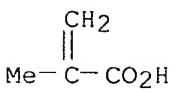
CM 2

CRN 100-42-5
CMF C8 H8



CM 3

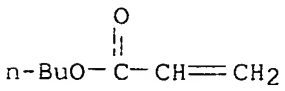
CRN 79-41-4
CMF C4 H6 O2



RN 26428-43-3 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, 2-oxiranylmethyl ester, polymer with butyl 2-propenoate and ethenylbenzene (CA INDEX NAME)

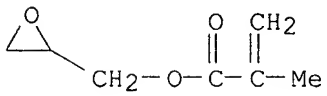
CM 1

CRN 141-32-2
CMF C7 H12 O2



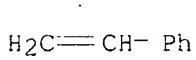
CM 2

CRN 106-91-2
CMF C7 H10 O3



CM 3

CRN 100-42-5
CMF C8 H8



L82 ANSWER 5 OF 9 HCAPLUS COPYRIGHT 2008 ACS on STN
AN 1997:794056 HCAPLUS
DN 128:108413
TI **Electrophotographic toner** using **binder** comprising carboxy-substituted vinyl **resin** and glycidyl-substituted **resin** as hardener
IN Okada, Yasuo; **Sakata, Kazuya**; Hata, Masaaki
PA **Mitsui Toatsu Chemicals, Inc., Japan; Mitsui Chemicals, Inc.**
SO Jpn. Kokai Tokkyo Koho, 8 pp.
CODEN: JKXXAF
DT **Patent**
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 09319140	A	19971212	JP 1996-131648	19960527 <--
	JP 3532033	B2	20040531		
PRAI	JP 1996-131648		19960527 <--		

AB The **toner** consists of at least a colorant and the following **binder resins**: (A) a glycidyl-containing vinyl **resin** with weight average **mol. weight** of 10,000-100,000 as a **crosslinking** agent and a COOH-containing vinyl **resin** with acid value of 1-30 mg KOH/g and glass transition temperature Tg of 40-70°. The **toner** is applicable to high speed developer and shows improved reproduction quality, anti-offset property, and prevention of blocking and grinding.

IC ICM **G03G0009-087**
ICS **G03G0009-08**
CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38
ST **electrophotog toner binder resin**; high speed developer **electrophotog toner**; carboxy contg **resin binder electrophotog toner**; glycidyl contg **resin** hardener **binder toner**
IT **Binders**
Crosslinking agents

Electrophotographic toners
(**electrophotog. toner** for high speed developer using **binder** comprising carboxy-substituted **resin** and glycidyl-substituted **resin** hardener)

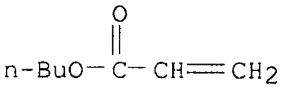
IT **38637-59-1P**, Butyl acrylate-glycidyl methacrylate-methacrylic acid-styrene copolymer
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(**binder**; **electrophotog. toner** for high speed developer using **binder** comprising carboxy-substituted **resin** and glycidyl-substituted **resin** hardener)

IT **38637-59-1P**, Butyl acrylate-glycidyl methacrylate-methacrylic acid-styrene copolymer
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(**binder**; **electrophotog. toner** for high speed developer using **binder** comprising carboxy-substituted **resin** and glycidyl-substituted **resin** hardener)

RN 38637-59-1 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, polymer with butyl 2-propenoate, ethenylbenzene and 2-oxiranylmethyl 2-methyl-2-propenoate (CA INDEX NAME)

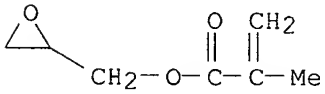
CM 1

CRN 141-32-2
CMF C7 H12 O2



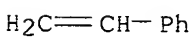
CM 2

CRN 106-91-2
CMF C7 H10 O3



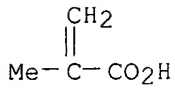
CM 3

CRN 100-42-5
CMF C8 H8



CM 4

CRN 79-41-4
CMF C4 H6 O2



L82 ANSWER 6 OF 9 HCAPLUS COPYRIGHT 2008 ACS on STN
AN 1994:667747 HCAPLUS
DN 121:267747
TI **Electrophotographic toner** composition and its manufacture
IN Matsumoto, Takatsuru; Hirayama, Nobuhiro; Kawasaki, Shoji; Uchama, Kenji; Uramoto, Katsuo; Fukui, Tamami
PA **Mitsui Toatsu Chemicals, Japan**
SO Jpn. Kokai Tokkyo Koho, 11 pp.
CODEN: JKXXAF
DT **Patent**
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 06075427	A	19940318	JP 1992-226956	19920826 <--
JP 3139846	B2	20010305		
PRAI JP 1992-226956		19920826 <--		

AB The title **toner** composition consists mainly of an ethylenic polymer (**Mw** ≤50,000 ; **Mw**/Mn ≤3.0 ; **Mw** = weight average **mol. weight**; Mn = number average **mol. weight**) prepared from ethylenic unsatd. monomer 100 with multifunctional unsatd. monomer 5-40 and/or multifunctional polymerization initiator 0.5-12 parts. The **toner** showed improved low fixing temperature and wide offset temperature range, and provided superior high quality images.
IC ICM **G03G0009-087**
CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
ST **electrophotog** developer **toner** compn; polymn initiator **electrophotog toner binder**; **crosslinking** agent **electrophotog toner binder**
IT **Crosslinking** agents
Polymerization catalysts
(**electrophotog. toner binder resin** for improved low fixing temperature)
IT **Electrophotographic developers**
(**toners, electrophotog.-toner binder resin** for improved low fixing temperature)
IT 1321-74-0, Divinylbenzene, reactions 2358-84-1 3290-92-4, Trimethylolpropanetrimethacrylate 15625-89-5, Trimethylolpropanetriacrylate 26570-48-9, Polyethylene glycol diacrylate 52496-08-9, Polypropylene glycol diacrylate 104180-35-0
RL: RCT (Reactant); RACT (Reactant or reagent)
(**crosslinking** agent of **electrophotog. toner binder resin** for improved low fixing temperature)
IT 1705-60-8, 2,2-Bis[4,4-bis(tert-butylperoxy)cyclohexyl]propane
RL: CAT (Catalyst use); USES (Uses)
(**electrophotog. toner binder resin** for improved low fixing temperature)

IT **25767-47-9**, n-Butyl acrylate-styrene copolymer 27306-46-3, Iso-Butyl acrylate-styrene copolymer **60806-47-5**, n-Butyl acrylate-divinylbenzene-styrene copolymer 85884-66-8 158895-10-4
RL: DEV (Device component use); POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(**electrophotog. toner binder resin** for improved low fixing temperature)

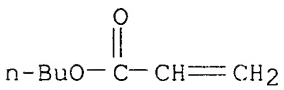
IT 83786-08-7, Tri-tert-butyl triperoxytrimellitate 158895-11-5
RL: CAT (Catalyst use); USES (Uses)
(polymerization initiator of **electrophotog. toner binder resin** for improved low fixing temperature)

IT **25767-47-9**, n-Butyl acrylate-styrene copolymer **60806-47-5**, n-Butyl acrylate-divinylbenzene-styrene copolymer
RL: DEV (Device component use); POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(**electrophotog. toner binder resin** for improved low fixing temperature)

RN 25767-47-9 HCAPLUS
CN 2-Propenoic acid, butyl ester, polymer with ethenylbenzene (CA INDEX NAME)

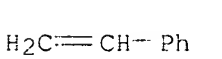
CM 1

CRN 141-32-2
CMF C7 H12 O2



CM 2

CRN 100-42-5
CMF C8 H8



RN 60806-47-5 HCAPLUS
CN 2-Propenoic acid, butyl ester, polymer with diethenylbenzene and ethenylbenzene (CA INDEX NAME)

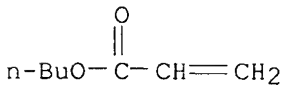
CM 1

CRN 1321-74-0
CMF C10 H10
CCI IDS

2 [D1—CH═CH2]

CM 2

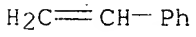
CRN 141-32-2
CMF C7 H12 O2



n-BuO—C(═O)—CH═CH2

CM 3

CRN 100-42-5
CMF C8 H8



H2C═CH—Ph

L82 ANSWER 7 OF 9 HCAPLUS COPYRIGHT 2008 ACS on STN
AN 1994:284939 HCAPLUS
DN 120:284939
TI **Resin** composition for **electrophotographic toner**
IN Matsumoto, Katsuru; Hirayama, Nobuhiro; Uchiyama, Kenji
PA **Mitsui Toatsu Chemicals, Inc., Japan**
SO Eur. Pat. Appl., 55 pp.
CODEN: EPXXDW
DT **Patent**
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 568309	A2	19931103	EP 1993-303267	19930427 <--
	EP 568309	A3	19940727		
	EP 568309	B1	19970716		
	R: DE, FR, GB, NL				
	JP 06130721	A	19940513	JP 1993-89677	19930416 <--
	JP 2981362	B2	19991122		
	US 5502110	A	19960326	US 1993-52831	19930427 <--
	KR 9704162	B1	19970325	KR 1993-7139	19930428 <--
PRAI	JP 1992-110338	A	19920428 <--		
	JP 1992-152176	A	19920611 <--		
	JP 1992-154848	A	19920615 <--		

JP 1992-167351 A 19920625 <--
JP 1992-237295 A 19920904 <--

AB A **resin** composition for an **electrophotog. toner** comprises an ethylene series high polymer (Y) and an ethylene series polymer (X) prepared from 100 parts of a bifunctional ethylene series unsatd. monomer and 0.01-10 parts by weight of a substance having ≥3 peroxide groups in the mol. and/or a substance having ≥1 unsatd. functional groups and ≥1 peroxide groups in the mol .Mw/Mb (Mw is weight-average **mol. weight**, and Mb is weight-average **mol. weight** between **crosslinking** points) of the polymer (X) being from 2 to 99, and the Mw of the polymer (X) being 50,000 or less. This **resin** composition has an excellent balance of phys. properties and particularly excellent offset resistance and **toner** strength.

IC ICM **G03G0009-087**

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST **resin electrophotog toner**

IT **Electrophotographic developers**
(**toners**, with excellent offset resistance and strength)

IT **9003-53-6**, Styrene homopolymer **25767-47-9**, Butyl acrylate-styrene copolymer **60806-47-5**, Butyl acrylate-divinylbenzene-styrene copolymer
RL: TEM (Technical or engineered material use); USES (Uses)
(**electrophotog. toners** containing, for improved strength)

IT **9003-53-6**, Styrene homopolymer **25767-47-9**, Butyl acrylate-styrene copolymer **60806-47-5**, Butyl acrylate-divinylbenzene-styrene copolymer
RL: TEM (Technical or engineered material use); USES (Uses)
(**electrophotog. toners** containing, for improved strength)

RN 9003-53-6 HCAPLUS

CN Benzene, ethenyl-, homopolymer (CA INDEX NAME)

CM 1

CRN 100-42-5
CMF C8 H8

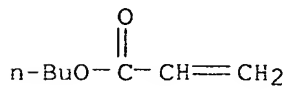
$H_2C{=}CH{-}Ph$

RN 25767-47-9 HCAPLUS

CN 2-Propenoic acid, butyl ester, polymer with ethenylbenzene (CA INDEX NAME)

CM 1

CRN 141-32-2
CMF C7 H12 O2



CM 2

CRN 100-42-5
CMF C8 H8

$H_2C{=}CH{-}Ph$

RN 60806-47-5 HCAPLUS
CN 2-Propenoic acid, butyl ester, polymer with diethenylbenzene and ethenylbenzene (CA INDEX NAME)

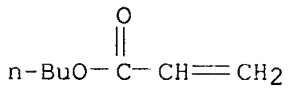
CM 1

CRN 1321-74-0
CMF C10 H10
CCI IDS

$2\left[\ Dl{-}CH{=}CH_2\ \right]$

CM 2

CRN 141-32-2
CMF C7 H12 O2



CM 3

CRN 100-42-5
CMF C8 H8

$H_2C{=}CH{-}Ph$

L82 ANSWER 8 OF 9 HCAPLUS COPYRIGHT 2008 ACS on STN
AN 1990:88192 HCAPLUS
DN 112:88192
TI **Resin** for electrostatographic **toner**
IN Aizawa, Hironori; Shin, Masaaki; Okubo, Atsuo
PA **Mitsui Toatsu Chemicals, Inc.**, Japan

SO PCT Int. Appl., 28 pp.
CODEN: PIXXD2
DT **Patent**
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 8904509	A1	19890518	WO 1987-JP858	19871106 <--
	W: JP, KR, US				
	RW: AT, BE, CH, DE, FR, GB, IT, LU, NL, SE				
	EP 344308	A1	19891206	EP 1987-907344	19871106 <--
	EP 344308	B1	19940817		
	R: CH, DE, FR, GB, IT, LI, NL				
	CA 1314423	C	19930316	CA 1987-555654	19871230 <--
	US 5066727	A	19911119	US 1989-381748	19890626 <--
PRAI	WO 1987-JP858	A	19871106 <--		

AB A **resin** for electrostatog. **toner** is claimed, which contains as a major component a polymer obtained by mixing 20 to 80 parts by weight of a low-**mol.**-**weight** polymer having a number-average **mol. weight** of 1000 to 5000 and Tg of 40 to 75°, 80 to 20 parts by weight of a vinyl monomer, 0.01 to 5 parts by weight of a polymerization initiator, and 0 to 3 parts by weight of a **crosslinking** agent, dispersing the mixture in an aqueous system, and conducting polymerization This **resin** is excellent in low-temperature fixability, offset resistance, distinctness of images and prevents copied images from causing changes by, for example, bleeding of a plasticizer.

IC ICM **G03G0009-08**
ICS **G03G0009-14**
CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
ST electrostatog **toner resin**
IT Electrography
(developers, **toners**)
IT **Electrophotographic developers**
(**toners**)
IT 53351-70-5 **60806-47-5**
RL: USES (Uses)
(electrostatog. **toner** using)
IT **60806-47-5**
RL: USES (Uses)
(electrostatog. **toner** using)
RN 60806-47-5 HCAPLUS
CN 2-Propenoic acid, butyl ester, polymer with diethenylbenzene and ethenylbenzene (CA INDEX NAME)

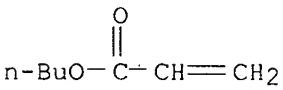
CM 1

CRN 1321-74-0
CMF C10 H10
CCI IDS

2 [D1—CH═CH$_2$]

CM 2

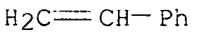
CRN 141-32-2
CMF C7 H12 O2



n-BuO—C(=O)—CH═CH$_2$

CM 3

CRN 100-42-5
CMF C8 H8



H$_2$C═CH—Ph

L82 ANSWER 9 OF 9 HCAPLUS COPYRIGHT 2008 ACS on STN
AN 1989:523747 HCAPLUS
DN 111:123747
TI **Toner** for **electrophotography** and manufacture thereof
IN Hirayama, Nobuhiro; Shin, Masaaki; Kawasaki, Shoji; Misawa, Akira; Fujiwara, Akio; Uchiyama, Kenji
PA **Mitsui Toatsu Chemicals, Inc., Japan**
SO PCT Int. Appl., 45 pp.
CODEN: PIXXD2
DT **Patent**
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 8900718	A1	19890126	WO 1987-JP719	19870930 <--
	W: KR, US				
	RW: AT, BE, CH, DE, FR, GB, IT, LU, NL, SE				
	JP 01015752	A	19890119	JP 1987-171088	19870710 <--
	JP 2865201	B2	19990308		
	EP 323513	A1	19890712	EP 1987-906449	19870930 <--
	EP 323513	B1	19960103		
	EP 323513	B2	20060208		
	R: CH, DE, FR, GB, IT, LI, NL				
	CA 1316741	C	19930427	CA 1987-552739	19871125 <--
	US 5084368	A	19920128	US 1989-320239	19890224 <--

US 5362595 A 19941108 US 1992-966570 19921026 <--
PRAI JP 1987-171088 A 19870710 <--
WO 1987-JP719 W 19870930 <--
US 1989-320239 A3 19890224 <--
US 1991-747700 B1 19910820 <--

AB A **toner** for **electrophotog.** contains a **resin** and a colorant as major components, and the **resin** is a non-**crosslinked** polymer of vinyl monomer or a mixture of such polymer and has a number-average **mol. weight** (Mn) of 2,000-15,000, a Z-average **mol. weight** (Mz) of ≥400,000 and an Mz to Mn ratio of 50 to 600. This **toner** is excellent in fixability, etc. at a high speed or at low temps.

IC ICM **G03G0009-08**
ICS **G03G0009-14**

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 35

ST **electrophotog toner** vinyl polymer fixability

IT Polymerization
(of acrylic copolymers, in manufacture of **electrophotog. toners**)

IT **Electrophotographic developers**
(**toners**, acrylic polymer-based, with good fixability at high speed and low temperature)

IT 9017-48-5, Butyl methacrylate-divinylbenzene-styrene copolymer
25036-16-2, Butyl acrylate-methacrylic acid-styrene copolymer
25213-39-2, Butyl methacrylate-styrene copolymer
25767-47-9, Styrene-butyl acrylate copolymer **122564-20-9**
RL: TEM (Technical or engineered material use); USES (Uses)
(**electrophotog. toners** containing, fixable at high speed and low temperature)

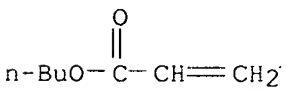
IT **25036-16-2**, Butyl acrylate-methacrylic acid-styrene copolymer
25213-39-2, Butyl methacrylate-styrene copolymer
25767-47-9, Styrene-butyl acrylate copolymer **122564-20-9**
RL: TEM (Technical or engineered material use); USES (Uses)
(**electrophotog. toners** containing, fixable at high speed and low temperature)

RN 25036-16-2 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, polymer with butyl 2-propenoate and ethenylbenzene (CA INDEX NAME)

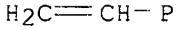
CM 1

CRN 141-32-2
CMF C7 H12 O2



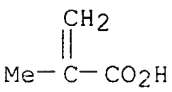
CM 2

CRN 100-42-5
CMF C8 H8



CM 3

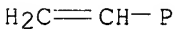
CRN 79-41-4
CMF C4 H6 O2



RN 25213-39-2 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, butyl ester, polymer with ethenylbenzene (CA INDEX NAME)

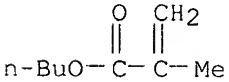
CM 1

CRN 100-42-5
CMF C8 H8



CM 2

CRN 97-88-1
CMF C8 H14 O2



RN 25767-47-9 HCAPLUS
CN 2-Propenoic acid, butyl ester, polymer with ethenylbenzene (CA INDEX NAME)

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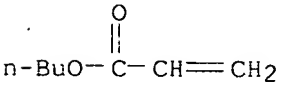
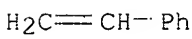
CRN 141-32-2
CMF C7 H12 O2



CM 2

CRN 100-42-5

CMF C8 H8

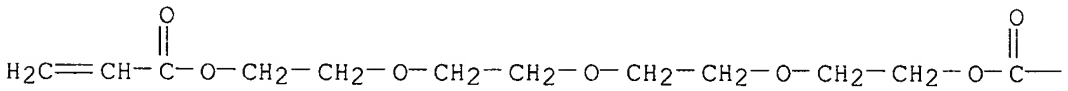


RN 122564-20-9 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, polymer with butyl 2-propenoate, ethenylbenzene and oxybis(2,1-ethanediyloxy-2,1-ethanediyl) di-2-propenoate (9CI) (CA INDEX NAME)

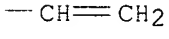
CM 1

CRN 17831-71-9
CMF C14 H22 O7

PAGE 1-A

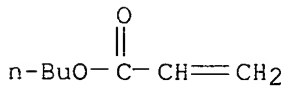


PAGE 1-B



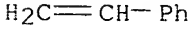
CM 2

CRN 141-32-2
CMF C7 H12 O2



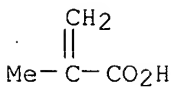
CM 3

CRN 100-42-5
CMF C8 H8



CM 4

CRN 79-41-4
CMF C4 H6 O2



=> d l83 bib abs hitind hitstr retable tot

L83 ANSWER 1 OF 6 HCAPLUS COPYRIGHT 2008 ACS on STN
AN 2006:632877 HCAPLUS
DN 145:92930
TI **Electrophotographic toners** showing good fusion in high-speed printing and their **binder resins**
IN **Sakata, Kazuya**; Kawasaki, Shunji; Sasaki, Ichiro; Uchiyama, Kenji; **Yoshida, Takeshi**
PA **Mitsui Chemicals Inc.**, **Japan**
SO Jpn. Kokai Tokkyo Koho, 16 pp.
CODEN: JKXXAF
DT **Patent**
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2006171364	A	20060629	JP 2004-363799	20041216 <--
PRAI JP 2004-363799		20041216 <--		

AB The **toners**, forming offset-resistant images, comprise (A) carboxyl- and glycidyl-containing styrene-acryl **resins** of gel fraction 1-50% and (B) crystalline polyesters, at weight ratio of A/B (50-99):(1-50). The styrene-acryl **resins** may be **crosslinked** with glycidyl-containing vinyl **resins** of epoxy value 0.005-0.1 equiv/100 g.
CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38
ST **electrophotog toner binder** cryst polyester acrylic **resin**; glycidyl **crosslinked** acrylic polymer **electrophotog toner binder**; offset resistant **electrophotog toner** high speed printing
IT Polymer blends
RL: TEM (Technical or engineered material use); USES (Uses)
(**binders**; **electrophotog. toners** containing glycidyl- and carboxyl-containing acrylic **resins** and showing good fusion on high-speed printing)
IT Polyesters, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(crystalline, **binders**; **electrophotog. toners** containing glycidyl- and carboxyl-containing acrylic **resins** and showing good fusion on high-speed printing)
IT **Binders**
Electrophotographic toners
(**electrophotog. toners** containing glycidyl- and carboxyl-containing acrylic **resins** and showing good fusion on high-speed printing)
IT **26428-43-3P**, Butyl acrylate-glycidyl methacrylate-styrene copolymer **38637-59-1P**, Butyl acrylate-glycidyl methacrylate-methacrylic acid-styrene copolymer 104493-49-4P, Fumaric acid-propoxylated bisphenol A-terephthalic acid copolymer **869729-85-1P**

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(**binders; electrophotog. toners** containing glycidyl- and carboxyl-containing acrylic **resins** and showing good fusion on high-speed printing)

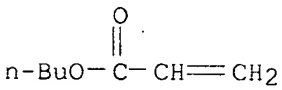
IT 461043-29-8P, 1,4-Butanediol-fumaric acid-1,6-hexanediol copolymer
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(**electrophotog. toners** containing glycidyl- and carboxyl-containing acrylic **resins** and showing good fusion on high-speed printing)

IT **26428-43-3P**, Butyl acrylate-glycidyl methacrylate-styrene copolymer **38637-59-1P**, Butyl acrylate-glycidyl methacrylate-methacrylic acid-styrene copolymer **869729-85-1P**
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(**binders; electrophotog. toners** containing glycidyl- and carboxyl-containing acrylic **resins** and showing good fusion on high-speed printing)

RN 26428-43-3 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, 2-oxiranylmethyl ester, polymer with butyl 2-propenoate and ethenylbenzene (CA INDEX NAME)

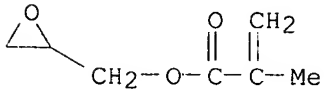
CM 1

CRN 141-32-2
CMF C7 H12 O2



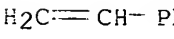
CM 2

CRN 106-91-2
CMF C7 H10 O3



CM 3

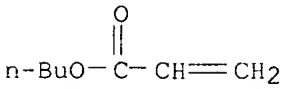
CRN 100-42-5
CMF C8 H8



RN 38637-59-1 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, polymer with butyl 2-propenoate, ethenylbenzene and 2-oxiranylmethyl 2-methyl-2-propenoate (CA INDEX NAME)

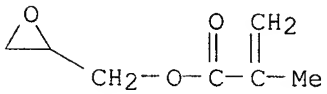
CM 1

CRN 141-32-2
CMF C7 H12 O2



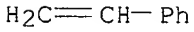
CM 2

CRN 106-91-2
CMF C7 H10 O3



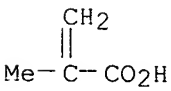
CM 3

CRN 100-42-5
CMF C8 H8



CM 4

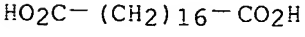
CRN 79-41-4
CMF C4 H6 O2



RN 869729-85-1 HCAPLUS
CN Octadecanedioic acid, polymer with 1,4-butanediol (9CI) (CA INDEX NAME)

CM 1

CRN 871-70-5
CMF C18 H34 O4



CM 2

CRN 110-63-4
CMF C4 H10 O2

HO—$(CH_2)_4$—OH

L83 ANSWER 2 OF 6 HCAPLUS COPYRIGHT 2008 ACS on STN
AN 2003:892468 HCAPLUS
DN 139:366427
TI **Thermosetting** powder coating composition, forming coating film, and coating film
IN Mizoguchi, Mitsuyuki; Asami, Keiichi; Hirose, Yoshiharu
PA **Mitsui Chemicals, Inc., Japan**
SO U.S. Pat. Appl. Publ., 20 pp.
CODEN: USXXCO
DT **Patent**
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2003212216	A1	20031113	US 2003-430211	20030507 <--
	EP 1362899	A2	20031119	EP 2003-10186	20030506 <--
	EP 1362899	A3	20040121		
	EP 1362899	B1	20060705		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
	KR 2004030202	A	20040409	KR 2003-28605	20030506 <--
	CN 1456616	A	20031119	CN 2003-123420	20030507 <--
	JP 2004027214	A	20040129	JP 2003-128766	20030507 <--
PRAI	JP 2002-131999	A	20020507 <--		

AB A **thermosetting** powder coating composition comprises a glycidyl group-containing acrylic copolymer component (A) and a curative component (B) composed of dodecanedioic acid linear polyacid anhydride or tetradecanedioic acid linear polyacid anhydride, where the time, δT, required for decrease of the absolute value of a complex elastic modulus (η*) of the composition from 100,000 Pa-s to 5 Pa-s is ≤200 s. The **thermosetting** powder coating composition is favorable for clear coating of automotive parts and automotive top clear coating, and exhibits, particularly in coating of a thin-film 35-50 μm, excellent appearance (smoothness, gloss, transparency, etc.), phys. properties of practical level (hardness, scratch/mar resistance, etc.) and chemical properties (acid resistance, solvent resistance, etc.).

IC ICM C08F0120-02
INCL 525329700
CC 42-10 (Coatings, Inks, and Related Products)
ST automobile clear coat **thermosetting** powder coating
IT Coating materials
(powder; **thermosetting** powder coating composition of glycidyl methacrylate copolymer and polyacid **crosslinker** for hard, glossy and resistant automotive top coat thin films)
IT Coating materials
(topcoats; **thermosetting** powder coating composition of glycidyl methacrylate copolymer and polyacid **crosslinker** for hard, glossy and resistant automotive top coat thin films)
IT 618910-69-3P 620974-04-1P 620974-07-4P 620974-08-5P 620974-09-6P 620974-10-9P
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(coating; **thermosetting** powder coating composition of glycidyl methacrylate copolymer and polyacid **crosslinker** for hard, glossy and resistant automotive top coat thin films)

IT 179530-22-4, KR 85
RL: MOA (Modifier or additive use); USES (Uses)
(for **crosslinking** aid; **thermosetting** powder coating composition of glycidyl methacrylate copolymer and polyacid **crosslinker** for hard, glossy and resistant automotive top coat thin films)

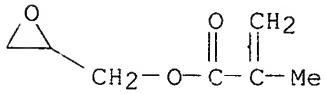
IT **29564-58-7P**, Glycidyl methacrylate-methyl methacrylate-Styrene copolymer 63266-53-5P, Glycidyl methacrylate-isobutyl methacrylate-Methyl methacrylate-Styrene copolymer 206870-22-6P, Butyl methacrylate-glycidyl methacrylate-isobornyl acrylate-styrene copolymer 620974-05-2P, Cyclohexyl methacrylate-Glycidyl methacrylate-Isobornyl methacrylate-isobutyl methacrylate-Styrene copolymer 620974-06-3P, Cyclohexyl methacrylate-Glycidyl methacrylate-Isobornyl methacrylate-Styrene copolymer
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(preparation and **crosslinking**; **thermosetting** powder coating composition of glycidyl methacrylate copolymer and polyacid **crosslinker** for hard, glossy and resistant automotive top coat thin films)

IT **29564-58-7P**, Glycidyl methacrylate-methyl methacrylate-Styrene copolymer
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(preparation and **crosslinking**; **thermosetting** powder coating composition of glycidyl methacrylate copolymer and polyacid **crosslinker** for hard, glossy and resistant automotive top coat thin films)

RN 29564-58-7 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, methyl ester, polymer with ethenylbenzene and 2-oxiranylmethyl 2-methyl-2-propenoate (CA INDEX NAME)

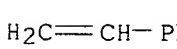
CM 1

CRN 106-91-2
CMF C7 H10 O3



CM 2

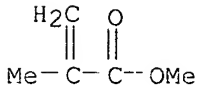
CRN 100-42-5
CMF C8 H8



CM 3

CRN 80-62-6

CMF C5 H8 O2



L83 ANSWER 3 OF 6 HCAPLUS COPYRIGHT 2008 ACS on STN
AN 2003:94496 HCAPLUS
DN 138:145039
TI **Electrophotographic toner**, its manufacturing method, and its sealing method in cartridge
IN Ishida, Masato; Kusagaya, Takeshi; Sasaki, Ichiro
PA **Mitsui Takeda Chemical Inc., Japan**
SO Jpn. Kokai Tokkyo Koho, 11 pp.
CODEN: JKXXAF
DT **Patent**
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2003035967	A	20030207	JP 2001-224799	20010725 <--
PRAI JP 2001-224799		20010725 <--		

AB The **toner** is manufactured by polymerizing a liquid composition comprising ≥1 of a **crosslinking** agent and a **resin** with 1-60 mg-KOH/g acid value and ≥1 of styrene, acrylic, and methacrylic monomers. It is characterized by 0.80-0.97 average circularity measured by a flow particle image analyzer, 5-40° or 8-30° collapse angle by a powder tester, 15-40° repose angle, and 120-200 shape factor (SF 1). The sealing method of the **toner** in cartridge for leaking prevention is also claimed. The **toner** shows good flowability and improved sealing in the cartridge.

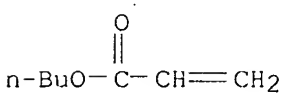
IC ICM **G03G0009-08**
ICS **G03G0009-087**; G03G0015-08
CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
ST **electrophotog toner** acrylic polymer suspension polymn; **toner** particle circularity repose angle
IT **Electrophotographic toners**
(**electrophotog. toner** formed by suspension polymerization and showing good flowability)
IT Polyesters, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(**electrophotog. toner** formed by suspension polymerization and showing good flowability)
IT **25767-47-9P**, Butyl acrylate-styrene copolymer **60806-47-5P**, Butyl acrylate-divinylbenzene-styrene copolymer
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(**electrophotog. toner** formed by suspension polymerization and showing good flowability)
IT 26659-32-5, Bisphenol A-terephthalic acid copolymer, sru 26659-86-9, Bisphenol A-terephthalic acid copolymer 87945-57-1, Bisphenol A-fumaric acid-terephthalic acid copolymer
RL: TEM (Technical or engineered material use); USES (Uses)
(**electrophotog. toner** formed by suspension polymerization and showing good flowability)
IT **25767-47-9P**, Butyl acrylate-styrene copolymer **60806-47-5P**

, Butyl acrylate-divinylbenzene-styrene copolymer
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(**electrophotog. toner** formed by suspension polymerization and showing good flowability)

RN 25767-47-9 HCAPLUS
CN 2-Propenoic acid, butyl ester, polymer with ethenylbenzene (CA INDEX NAME)

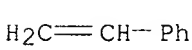
CM 1

CRN 141-32-2
CMF C7 H12 O2



CM 2

CRN 100-42-5
CMF C8 H8



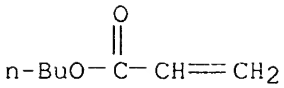
RN 60806-47-5 HCAPLUS
CN 2-Propenoic acid, butyl ester, polymer with diethenylbenzene and ethenylbenzene (CA INDEX NAME)

CM 1

CRN 1321-74-0
CMF C10 H10
CCI IDS

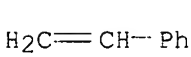
CM 2

CRN 141-32-2
CMF C7 H12 O2



CM 3

CRN 100-42-5
CMF C8 H8



L83 ANSWER 4 OF 6 HCAPLUS COPYRIGHT 2008 ACS on STN
AN 2002:291845 HCAPLUS
DN 136:316890
TI A **toner binder** for **electrophotographic toner**
IN Iwa, Tsuyoshi; **Sakata, Kazuya**; Kawasaki, Shoji; Shin, Masaaki
PA **Mitsui Chemicals Inc., Japan**
SO Eur. Pat. Appl., 19 pp.
CODEN: EPXXDW
DT **Patent**
LA English
FAN.CNT 1

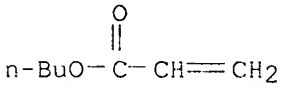
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1197805	A2	20020417	EP 2001-124159	20011010 <--
	EP 1197805	A3	20030514		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	TW 227384	B	20050201	TW 2001-90124998	20011009 <--
	JP 2002189316	A	20020705	JP 2001-312674	20011010 <--
	JP 3929272	B2	20070613		
	CN 1349135	A	20020515	CN 2001-141546	20011012 <--
	US 2002076637	A1	20020620	US 2001-974893	20011012 <--
	US 6497983	B2	20021224		
PRAI	JP 2000-312017	A	20001012 <--		

AB The present invention is aimed at providing a **toner binder** for **electrophotog.** that is excellent in the fixing property, offset resistance, blocking property, grindability, durable developing property and the like to correspond to the high-speed movement of a copier. The **toner binder** is obtained by heating and melting a vinyl **resin** (a) containing glycidyl groups and a vinyl **resin** (b) containing carboxyl groups, to be **crosslinked** by the use of vinyl **resin** (a) as a **crosslinking** agent. The viscoelasticity of the **toner binder** is measured in the temperature range of 50-200°C and at a heating rate of 2°C/min., the viscoelasticity curve in the temperature range of 100-200°C showing the relationship between the storage modulus and temperature, in which curve the axis of ordinate is the logarithm (Pa) of storage modulus G, and the axis of abscissa is temperature, has a concave in the temperature range of 140-180°C and has a min. value of storage modulus G' at the bottom of the range, and this G' 0 and storage modulus G' 200 at 200°C are G' 0 < G' 200 and the difference ΔG' (G' 200 - G' 0 = ΔG') is 300 Pa or more.

IC ICM **G03G0009-087**
CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 35, 38
ST **electrophotog toner binder**
IT **Electrophotographic toners**
(**toner binder** for **electrophotog. toner**)
IT **38637-59-1P**, Butyl acrylate-glycidyl methacrylate-methacrylic acid-styrene copolymer
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(**crosslinked; toner binder** for **electrophotog. toner** containing)
IT **38637-59-1P**, Butyl acrylate-glycidyl methacrylate-methacrylic acid-styrene copolymer
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(**crosslinked; toner binder** for **electrophotog. toner** containing)
RN 38637-59-1 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, polymer with butyl 2-propenoate, ethenylbenzene and 2-oxiranylmethyl 2-methyl-2-propenoate (CA INDEX NAME)

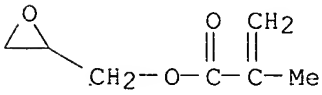
CM 1

CRN 141-32-2
CMF C7 H12 O2



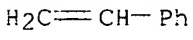
CM 2

CRN 106-91-2
CMF C7 H10 O3



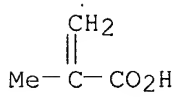
CM 3

CRN 100-42-5
CMF C8 H8



CM 4

CRN 79-41-4
CMF C4 H6 O2



L83 ANSWER 5 OF 6 HCAPLUS COPYRIGHT 2008 ACS on STN
AN 2000:43386 HCAPLUS
DN 132:94731
TI **Thermosetting resin** compositions containing phosphine oxides and their cured products and protecting films
IN Mizuta, Yasushi; Kikuta, Yoshio; Noboru, Tadahito; Takagi, Usaji
PA **Mitsui Chemicals Inc.**, **Japan**
SO Jpn. Kokai Tokkyo Koho, 12 pp.
CODEN: JKXXAF
DT **Patent**
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000017053	A	20000118	JP 1998-184961	19980630 <--
	JP 3693500	B2	20050907		
PRAI	JP 1998-184961		19980630 <--		

OS MARPAT 132:94731
AB The compns. contain (A) 40-90 parts epoxy **resins** having ≥2 epoxy groups, (B) 10-60 parts polybasic carboxylic acid esters with monohydric alcs. R1(CO2Z)n (R1 = linkage group derived from C1-35 aliphatic hydrocarbon, aromatic hydrocarbon, aliphatic hydrocarbon, or their derivs.; Z = C1-18 aliphatic hydrocarbon or aromatic substituent derived from monohydric alc.; n ≥2), and (C) 0.01-10 phr phosphine oxides [(NR22)3P:N]3P:O (I; R2 = H, C1-10 hydrocarbyl). Cured products and protecting films from the compns. for liquid crystal display color filters are also claimed. Thus, a composition containing glycidyl methacrylate-Me methacrylate-styrene copolymer 76, tri-Bu trimellitate 24, I (R2 = Me) 1, propylene glycol Me ether acetate 144, and Megafac F 142D 0.01, and γ-glycidoxypropyltrimethoxysilane 4.5 parts showing good storage stability was applied on a color filter and cured at 200° for 1 h to give a protecting film with high surface flatness, adhesion to the filter, hardness, and good heat and solvent resistance.
IC ICM C08G0059-68
ICS C08G0059-42; C09D0163-00; G02B0005-20
CC 42-9 (Coatings, Inks, and Related Products)
Section cross-reference(s): 74
ST acrylic epoxy coating polybasic ester **crosslinking** agent; protective coating epoxy **resin** color filter LCD; liq crystal display color filter protective coating; **thermosetting** epoxy **resin** phosphine oxide curing accelerator
IT Coating materials
(heat- and solvent-resistant; **thermosetting** epoxy **resin** coating compns. containing phosphine oxide curing accelerators for color filters of liquid crystal displays)
IT **Crosslinking** catalysts
(phosphine oxides; **thermosetting** epoxy **resin** coating compns. containing phosphine oxide curing accelerators for color filters of liquid crystal displays)
IT Liquid crystal displays

Optical filters
(**thermosetting** epoxy **resin** coating compns. containing phosphine oxide curing accelerators for color filters of liquid crystal displays)

IT Epoxy **resins**, uses
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(**thermosetting** epoxy **resin** coating compns. containing phosphine oxide curing accelerators for color filters of liquid crystal displays)

IT Coating materials
(**thermosetting**; **thermosetting** epoxy **resin** coating compns. containing phosphine oxide curing accelerators for color filters of liquid crystal displays)

IT 102299-22-9 255063-52-6
RL: CAT (Catalyst use); USES (Uses)
(curing accelerator; **thermosetting** epoxy **resin** coating compns. containing phosphine oxide curing accelerators for color filters of liquid crystal displays)

IT 117-81-7
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(plasticizer; **thermosetting** epoxy **resin** coating compns. containing phosphine oxide curing accelerators for color filters of liquid crystal displays)

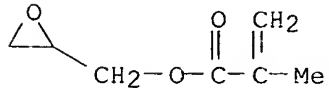
IT **29564-58-7P**, Dioctyl phthalate-glycidyl methacrylate-methyl methacrylate-styrene copolymer 255063-49-1P, Glycidyl methacrylate-methyl methacrylate-styrene-tributyl trimellitate copolymer 255063-51-5P, Dioctyl adipate-glycidyl methacrylate-methyl methacrylate-styrene copolymer
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(**thermosetting** epoxy **resin** coating compns. containing phosphine oxide curing accelerators for color filters of liquid crystal displays)

IT **29564-58-7P**, Dioctyl phthalate-glycidyl methacrylate-methyl methacrylate-styrene copolymer
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(**thermosetting** epoxy **resin** coating compns. containing phosphine oxide curing accelerators for color filters of liquid crystal displays)

RN 29564-58-7 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, methyl ester, polymer with ethenylbenzene and 2-oxiranylmethyl 2-methyl-2-propenoate (CA INDEX NAME)

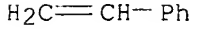
CM 1

CRN 106-91-2
CMF C7 H10 O3



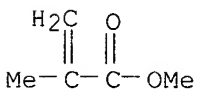
CM 2

CRN 100-42-5
CMF C8 H8



CM 3

CRN 80-62-6
CMF C5 H8 O2



L83 ANSWER 6 OF 6 HCAPLUS COPYRIGHT 2008 ACS on STN
AN 1987:34066 HCAPLUS
DN 106:34066
TI Methyl methacrylate syrup composition
IN Watanabe, Katsushi; Kageyama, Takafumi; Kano, Taisaku; Hirai, Koichi; Ichihara, Yoshinobu
PA **Mitsui Toatsu Chemicals, Inc., Japan**
SO U.S., 7 pp.
CODEN: USXXAM
DT **Patent**
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 4617367	A	19861014	US 1984-675568	19841128 <--
PRAI US 1984-675568		19841128 <--		

AB The title composition, which gives cured moldings having good water resistance, is prepared by mixing a syrup containing glycidyl groups with a syrup containing functional groups reactive with glycidyl groups. Thus, a syrup (31% polymerized) prepared from a 70.0:25.0:3.0:1.6 Me methacrylate (I)-styrene-trimethylolpropane trimethacrylate (II)-methacrylic acid mixture 49.5, a syrup (38% polymerized) prepared from a 54.0:23.0:20.0:2.0 I-styrene-glycidyl methacrylate-II mixture 49.5, and tert-Bu peroxyneodecanoate 1.0 part were mixed and cured 1 h at 70° to give a transparent molding which was unchanged after 16 h in boiling water.
IC ICM C08F0220-14
INCL 526273000
CC 37-6 (Plastics Manufacture and Processing)
ST methacrylate copolymer syrup curing; glycidyl methacrylate syrup curing; **crosslinking** methacrylate syrup molding; waterproofing molding methacrylate; methacrylic acid curing molding
IT Water-resistant materials
(methacrylate copolymer syrups for molded, **crosslinkable**)
IT **Crosslinking**
(of glycidyl-containing and glycidyl-reactive methacrylate polymer syrups, for water resistance)
IT 80-62-6D, polymers with glycidyl-containing and glycidyl-reactive acrylic monomers 100-42-5D, polymers with glycidyl-containing and glycidyl-reactive acrylic monomers 868-77-9D, 2-Hydroxyethyl methacrylate, polymers with

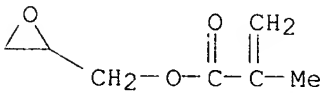
glycidyl-containing and glycidyl-reactive acrylic monomers 3290-92-4D, polymers with glycidyl-containing and glycidyl-reactive acrylic monomers **29564-58-7**, Glycidyl methacrylate-methyl methacrylate-styrene copolymer 42751-75-7 55567-80-1, Butyl methacrylate-glycidyl methacrylate-methyl methacrylate-styrene copolymer 106126-77-6 106126-78-7 106126-79-8
RL: USES (Uses)
(curable Me methacrylate syrups containing, for waterproof moldings)

IT **29564-58-7**, Glycidyl methacrylate-methyl methacrylate-styrene copolymer
RL: USES (Uses)
(curable Me methacrylate syrups containing, for waterproof moldings)

RN 29564-58-7 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, methyl ester, polymer with ethenylbenzene and 2-oxiranylmethyl 2-methyl-2-propenoate (CA INDEX NAME)

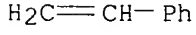
CM 1

CRN 106-91-2
CMF C7 H10 O3



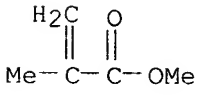
CM 2

CRN 100-42-5
CMF C8 H8



CM 3

CRN 80-62-6
CMF C5 H8 O2



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L2 1 S E3

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L4           11 S E4
                E KAZUYA/AU
                E YOSHIDA/AU
L5            5 S E3
                E YOSHIDA T/AU
                E YOSHIDA TAKE/AU
L6         1031 S E26
                E YOSHIDA T/AU
L7         1779 S E3-E8
                E YOSHIDA NAME/AU
L8          123 S E4
                E TAKESHI/AU
L9            4 S E3
L10           4 S E119
                E TAKESHI Y/AU
L11           4 S E3,E14
                E MITSUI/CO
L12        8713 S E51-E108
L13        8029 S E51-E108/PA,CS
                E E100+ALL
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L17          29 S L16 AND L1-L14
L18          12 S L17 AND TONER?/CW,CT
L19          20 S L17 AND TONER?
                E ELECTROPHOTOGRAPHIC TONER/CT
L20       11240 S E4-E8
                E E4+ALL
L21       21987 S E4+OLD,NT
L22          20 S L17 AND L20,L21
L23          20 S L18,L19,L22
L24           9 S L17 NOT L23
L25           0 S L23 AND PY<=2004 NOT P/DT
L26          19 S L23 AND (PY<=2004 OR PRY<=2004 OR AY<=2004) AND P/DT
L27          14 S L26 AND BIND? AND ?RESIN?
L28          17 S L26 AND (BIND? OR ?RESIN?)
L29           6 S L26 AND (?CROSSLINK? OR ?CROSS LINK?)
L30           2 S L26 AND C08J003-24/IPC,IC,ICM,ICS
L31           6 S L29,L30
L32           6 S L31 AND L27,L28
L33          13 S L26-L31 NOT L32

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                SEL RN L32

     FILE 'REGISTRY' ENTERED AT 08:05:39 ON 26 FEB 2008
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                SEL RN 3 5
L35           2 S E11-E12
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L38           0 S L37 AND PY<=2004 NOT P/DT
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L40          25 S L39,L26
L41          20 S L40 AND (BIND? OR ?RESIN?)
L42          22 S L40 AND TONER?
L43          22 S L40 AND L20,L21
L44          25 S L40-L43
L45          10 S L44 AND (?CROSSLINK? OR ?CROSS LINK?)
L46           2 S L44 AND C08J003-24/IPC,IC,ICM,ICS
L47          10 S L32,L45,L46
L48           8 S L47 AND ?ELECTROPHOTO?
L49           8 S L47 AND G03G009/IPC,IC,ICM,ICS
L50           8 S L48,L49
L51           2 S L47 NOT L50
L52           8 S L32,L50
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L55          14 S L53 AND ?ELECTROPHOTO?
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L63           7 S L60 AND 4/NC
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L65          18 S L62,L63

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L69          40 S L67 AND (PY<=2004 OR PRY<=2004 OR AY<=2004) AND P/DT
L70          31 S L69 AND (BIND? OR ?RESIN?)
L71          27 S L69 AND TONER?
L72          26 S L69 AND L20,L21
L73          26 S L69 AND ELECTROPHOTO?
L74           8 S L69 AND (?CROSSLINK? OR ?CROSS LINK?)
L75           0 S L69 AND C08J003-24/IPC,IC,ICM,ICS
L76          26 S L69 AND G03G009/IPC,IC,ICM,ICS
L77          16 S L74,L56 AND (?CROSSLINK? OR ?CROSS LINK? OR C08J003-24/IPC,IC
L78          16 S L77 AND L1-L14,L16-L33,L36-L67,L66-L77
L79          15 S L78 NOT 124:11099/DN
L80           2 S L79 AND THERMOSET?
L81          15 S L79,L80

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